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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,042	10/12/2000	Atsushi Watanabe	392.1702 (JDH)	5531

21171 7590 09/02/2004

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EXAMINER	
BARNES, CRYSTAL J	
ART UNIT	**PAPER NUMBER**
2121	

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/688,042	WATANABE ET AL.	
	Examiner	Art Unit	
	Crystal J. Barnes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☒ Claim(s) *1-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Non-Final Office Action in response to Amendment received on 10 June 2004. Claims 1-10 have been amended. Claims 11-13 have been added. Claims 1-13 are now pending in this application.

Drawings

2. The amendment to the specification to add the reference signs in the description was received on 10 June 2004. These corrections are acceptable.

Specification

3. The amendment to the specification was received on 10 June 2004. This correction is acceptable.

Claim Objections

4. The amendment to the claims was received on 10 June 2004. This correction is acceptable.

5. Claims 1-10 are objected to because of the following informalities: the status identifiers are misspelled ("amened" should be "amended"). Appropriate correction is required.

Response to Arguments

6. Applicant's arguments, see Remarks page 11, filed 10 June 2004, with respect to the rejection of claims 1-10 under 35 U.S.C. 102(e) as being anticipated by USPN 6,167,328 to Takaoka et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of USPN 6,243,611 B1 to Hazama et al.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

> invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,243,611 B1 to Hazama et al.

As per claim 1, the Hazama et al. reference discloses a graphic display apparatus for a robot system comprising: means for displaying and arranging a 3-D model of a robot (see column 42 lines 20-22, "3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") on a display screen ("robot motion simulation window") to cause the displayed model ("3-D representation") to move in animation (see column 42 lines 24-27, "bend sequence and robot motion") on the screen ("screen"); means for storing (see column 19 lines 16-20, "database 30") the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") and one or more 3-D models of a peripheral equipment, a machine, or a part (see column 19 lines 16-20, "part information, bend model data, feature extraction data, bend line information"), which is used in a system using the robot; and means for selecting (see column 21 lines 6-9, "selecting") one or more of the 3-D models (see column 21 lines 49-53, "3-D modeling information") stored in said storing means ("database

30") on the display screen (see column 21 6-9, "Windows based application"), wherein the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper"), or the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") and the 3-D model of a peripheral equipment, a machine, or a part ("part information, bend model data, feature extraction data, bend line information"), which was selected by said selecting means ("selecting"), are displayed and arranged on the display screen ("Windows based application"), with at least a part of the system using the robot being approximated (see column 22 lines 6-10, "extensive modifications").

As per claim 2, the Hazama et al. reference discloses a graphic display apparatus for a robot system comprising: means for displaying and arranging a 3-D model of a robot (see column 42 lines 20-22, "3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") on a display screen ("robot motion simulation window") to cause the displayed model ("3-D representation") to move in animation (see column 42 lines 24-27, "bend sequence and robot motion") on the screen ("screen"); means for storing (see column 19 lines 16-20, "database 30") the 3-D model of the robot ("3-D representation of the

press brake, the robot arm and gripper, and the reposition gripper") and one or more 3-D models of a peripheral equipment, a machine, or a part (see column 19 lines 16-20, "part information, bend model data, feature extraction data, bend line information"), which is used in a system using the robot; and means for selecting (see column 21 lines 6-9, "selecting") one or more of the 3-D models (see column 21 lines 49-53, "3-D modeling information") stored in said storing means ("database 30") on the display screen (see column 21 6-9, "Windows based application"); and means for adjusting dimensions of the 3-D model (see column 22 lines 6-10, "editing the dimensions of the part"), selected by said selecting means ("selecting"), on the screen ("screen"), wherein the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") of which dimensions were adjusted by said adjusting means ("editing the dimensions of the part"), or the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") and the 3-D model of a peripheral equipment, a machine, or a part ("part information, bend model data, feature extraction data, bend line information"), which was selected by said selecting means ("selecting"), of which dimensions were adjusted by said adjusting means ("editing the dimensions of the part"), are displayed and arranged

on the display screen ("Windows based application"), with at least a part of the system using the robot being approximated (see column 22 lines 6-10, "extensive modifications").

As per claim 3, the Hazama et al. reference discloses a graphic display apparatus for a robot system comprising: means for displaying and arranging a 3-D model of a robot (see column 42 lines 20-22, "3-D representation of the press brake, the robot arm and gripper, and the reposition gripper") on a display screen ("robot motion simulation window") to cause the displayed model ("3-D representation") to move in animation (see column 42 lines 24-27, "bend sequence and robot motion") on the screen ("screen"); first storing means for storing (see column 19 lines 16-20, "database 30") the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper"); second storing means (see column 19 lines 32-35, "separate data file in database 30") for storing one or more 3-D models of a peripheral equipment, a machine, or a part (see column 19 lines 16-20, "part information, bend model data, feature extraction data, bend line information"), which is used in a system using the robot; and means for selecting (see column 21 lines 6-9, "selecting") one or more of the 3-D models (see column 21 lines 49-53, "3-D modeling information")

stored in said second storing means ("database 30") on the display screen (see column 21 6-9, "Windows based application"); and means for adjusting a dimension of the 3-D model (see column 22 lines 6-10, "editing the dimensions of the part") selected by said selecting means ("selecting"), on the screen ("screen"), wherein the 3-D model of the robot ("3-D representation of the press brake, the robot arm and gripper, and the reposition gripper"), and the 3-D model of the peripheral equipment, the machine, or the part ("part information, bend model data, feature extraction data, bend line information"), which was selected by said selecting means ("selecting"), of which dimensions were adjusted by said adjusting means ("editing the dimensions of the part"), are displayed and arranged on the display screen ("Windows based application") with at least a part of the system using the robot being approximated (see column 22 lines 6-10, "extensive modifications").

As per claim 4, the Hazama et al. reference discloses further comprising means for displaying, on the screen, the robot motion (see column 41 lines 38-43, "robot motion") corresponding to at least a part of a robot program (see column 41 lines 18-25, "proposed bending plan"), in animation.

As per claim 5, the Hazama et al. reference discloses 3-D models of said peripheral equipment, said machine or said part ("part information, bend model

data, feature extraction data, bend line information") are classified by kinds (see column 19 lines 24-49, "part geometry and manufacturing data, part material information, features of the part"), a plurality of different types (see column 19 lines 24-49, "material type, types of bends, type of openings") are displayed on the screen ("screen") for each of classified kinds ("part geometry and manufacturing data, part material information, features of the part"), and a 3-D model is selected from among the displayed types ("material type, types of bends, type of openings").

As per claim 6, the Hazama et al. reference discloses further comprising means for adding (see column 21 lines 31-34, "new part") a 3-D model of the peripheral equipment, the machine, or the part ("part information, bend model data, feature extraction data, bend line information") of the robot in said storing means (see column 22 lines 1-4, "database 30").

As per claim 7, the Hazama et al. reference discloses further comprising means for sending information to and receiving information from (see column 26 lines 53-56, "imported") a robot controller ("CNC or NC controller"), wherein the shape ("bending code") of the 3-D model of the peripheral equipment ("bending machinery"), the machine, or the part ("part") is adjusted (see column 26 lines 56-58, "set-up and test") based on position data (see column 30 lines 9-14 "position

within bend sequence") which forms a physical feature ("bending") of the actual peripheral equipment ("bending machinery"), the machine, or the part ("part"), sent from the robot controller ("CNC or NC controller") through said information sending and receiving means (see column 17 lines 39-45, "interface").

As per claim 8, the Hazama et al. reference discloses a plan view of layout (see column 41 lines 25-29, "tool stage layout") of an operation system using the robot is displayed on the display screen ("display screen") and the 3-D model of the peripheral equipment, the machine, or the part ("tool") is arranged on the display screen ("display screen") in correspondence with the layout ("tool stage layout"), to carry out modeling of a production system using the robot.

As per claim 9, the Hazama et al. reference discloses when the dimension of the 3-D model selected by said selecting means ("selecting") is adjusted by said adjusting means ("editing the dimensions of the part"), coordination among the numerical values of a plurality of position data which constitute the 3-D model concerned is considered (see column 33 lines 11-17, "constraint").

As per claim 10, the Hazama et al. reference discloses further comprising a storing means (see column 55 lines 1-5, "tool library or data file") for storing constraint conditions ("tooling constraints") which stipulate the coordination among

numerical values of a plurality of position data ("bending data") which constitute each 3-D model stored in the second storing means ("part information, bend model data, feature extraction data, bend line information"), wherein when the dimension of the 3-D model selected by said selecting means ("selecting") is adjusted by said adjusting means ("editing the dimensions of the part"), coordination among the numerical values of a plurality of position data ("bending data") which constitute the 3-D model concerned is considered (see column 33 lines 11-17, "constraint") using the constraint condition ("tooling constraints") stored in said constraint condition storing means "tool library or data file").

As per claim 11, the rejection of claim 1 is incorporated and further claim 11 contains limitations recited in claim 1; therefore claim 11 is rejected under the same rationale as claim 1.

As per claim 12, the rejection of claim 2 is incorporated and further claim 12 contains limitations recited in claim 2; therefore claim 12 is rejected under the same rationale as claim 2.

As per claim 13, the rejection of claim 3 is incorporated and further claim 13 contains limitations recited in claim 3; therefore claim 13 is rejected under the same rationale as claim 3.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to displaying robot control in general:

USPN 4,868,766 to Oosterholt

USPN 5,682,886 to Delp et al.

USPN 6,642,922 B1 to Noda

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 703.306.5448 or 571.272.3679 after 14 October 2004. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703.308.3179 or 571.272.3687 after 14 October 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cjb
1 September 2004

Anthony Knight
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